

Memorandum



TO: Mahdi Zangeneh, Ph.D., P.Eng. – Senior Noise Review Engineer, MOECC

CC: Nick.Colella –Senior Project Evaluator, MOECC
Katherine Park – Development Manager, Windsor Solar LP
David Pettit – Project Manager, Windsor Solar LP

FROM: Amir A. Iravani

DATE: June 3, 2016

SUBJECT: *Windsor Solar – Inverter and Facility Rating Clarification*

OUR FILE: 149152

A Noise Study Report (NSR) was submitted to the MOECC for an amendment to the existing Renewable Energy Approval [REA #: 8284-9ZGNBN] in April 2016. This memorandum is prepared as per MOECC’s email request of May 26, 2016 and it is in response to the noise review comment for the NSR, pertaining to the generation rating for the Windsor Solar Project.

Table 1 summarizes the actual power ratings for each of the inverters at the Windsor Solar facility. The resulting overall rating for the Windsor Solar facility is therefore at 50 MW AC, as indicated in the April 2016 NSR. A letter from the equipment manufacturer, SMA, attached hereto as **Attachment 1**, confirms that the noise test data provided by the manufacturer (presented in Appendix A of the April 2016 NSR) reflects inverter’s operation at its maximum rating of 880 kW. As such, the sound power spectrum used in the analysis is conservative for the ratings at which the inverters will actually operate (i.e., 833 kW / 835 kW).

Furthermore, the sound power spectrum calculation for the inverter transformers are based on a sound level rating of 70 dB and dimensions of L = 120”, W = 90”, and H = 90”, as per Appendix A of the NSR. These parameters and hence the calculated sound power spectrum for the inverter transformers will remain the same for the MV stations, at the ratings indicated in **Table 1**.

Table 1 – Inverter Power Ratings – Windsor Solar Facility

MV Station ID	Inverter Rating (kW)		Total rating per Station (kW)
	Inverter 1	Inverter 2	
MV1	833	833	1,666
MV2	833	833	1,666
MV3	833	833	1,666
MV4	833	833	1,666
MV5	833	833	1,666
MV6	833	833	1,666
MV7	833	833	1,666

MV Station ID	Inverter Rating (kW)		Total rating per Station (kW)
	Inverter 1	Inverter 2	
MV8	833	833	1,666
MV9	833	833	1,666
MV10	833	833	1,666
MV11	833	833	1,666
MV12	833	833	1,666
MV13	833	833	1,666
MV14	833	833	1,666
MV15	833	833	1,666
MV16	833	833	1,666
MV17	833	833	1,666
MV18	833	833	1,666
MV19	833	833	1,666
MV20	833	833	1,666
MV21	833	833	1,666
MV22	833	833	1,666
MV23	833	833	1,666
MV24	833	833	1,666
MV25	833	833	1,666
MV26	835	835	1,670
MV27	835	835	1,670
MV28	835	835	1,670
MV29	835	835	1,670
MV30	835	835	1,670
Total Facility Rating:			50,000

Based on information presented in this memorandum, the noise impact analysis presented in the April 2016 NSR is reflective of the worst-case noise impact for the Windsor Solar Project. The generation rating for the facility is 50 MW AC.

We trust that the memorandum is to your satisfaction. Please do not hesitate to contact the undersigned if you have any further questions or comments.

Respectfully Submitted:

DILLON CONSULTING LIMITED



Amir A. Iravani, Ph.D., P.Eng.

Associate

Attachment 1
SMA Noise Data Confirmation Letter

May 24, 2016



To whom it may concern

SMA America, LLC
6020 West Oaks Blvd, Ste 300
Rocklin, CA 95765-3714
Tel.: +1 916 625 0870
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RE: SC800CP-US Acoustics Testing

Dear Sir/Madam,

This letter is to confirm that the SMA Acoustic Environmental Test, an extract of test report SC800CP-US-91:LE1613, was performed at 880 kW output power which represents a worst case scenario for acoustical noise with this inverter.

Sincerely,

A handwritten signature in black ink, appearing to read "Ravi Dodballapur", written in a cursive style.

Ravi Dodballapur
Director, Applications Engineering
SMA America LLC, Rocklin, CA